

In The Claims:

Please cancel claims 1-24 and replace with new claims 25–48, as follows:

25. (new) A method for improvement of the efficiency of a power amplifier utilized for transmission of radio signals in a portable radio communication device, comprising the steps of:

- establishing a required transmission power of said portable radio communication device;
- determining a desired load impedance that gives an optimal efficiency of said power amplifier for said required transmission power; and
- controlling the radiating impedance of an antenna element loading said power amplifier in dependence of said desired load impedance.

26. (new) The method as claimed in claim 25, wherein said step of controlling is followed by a step of adaptively controlling said arrangement in dependence of a power output from said power amplifier to increase said power output.

27. (new) The method as claimed in claim 25, wherein said step of establishing comprises reading out a control signal fed to said power amplifier or reading out the required output power defined by a base station.

28. (new) The method as claimed in claim 25, wherein said step of establishing comprises measuring an output voltage and an output current from said power amplifier.

29. (new) The method as claimed in claim 25, wherein said step of determining a desired load impedance comprises retrieving said desired load impedance corresponding to said required transmission power from a look-up table.

30. (new) A method for improvement of the efficiency of a power amplifier utilized for transmission of radio signals in a portable radio communication device, comprising the steps of:

- determining a power output from said power amplifier; and
- controlling the radiating impedance of an antenna element loading said power amplifier adaptively in dependence of said power output from said power amplifier to increase said power output.

31. (new) The method as claimed in claim 30, wherein said step of controlling comprises changing a capacitive coupling between said antenna element and a ground element.

32. (new) The method as claimed in claim 31, wherein said capacitive coupling is changed by varying the capacitance of a varactor.

33. (new) The method as claimed in claim 31, wherein said capacitive coupling is changed by connecting or disconnecting a capacitance.

34. (new) The method as claimed in claim 30, wherein said step of controlling comprises changing the size of said antenna element.

35. (new) The method as claimed in claim 34, wherein said size is changed by connecting a conductive element to said antenna element or disconnecting the conductive element from said antenna element.

36. (new) The method as claimed in claim 30, wherein said step of controlling comprises adjusting the length of a slit of said antenna element.

37. (new) The method as claimed in claim 30, wherein said antenna element is provided on a dielectric body and said step of controlling comprises changing the dielectric factor (ϵ_r) of said dielectric body.

38. (new) The method as claimed in claim 37, wherein said dielectric factor is changed by applying a control voltage over said dielectric body.

39. (new) An arrangement for improvement of the efficiency of a power amplifier utilized for transmission of radio signals in a portable radio communication device, comprising:

- a means for establishing a required transmission power of the portable radio communication device;
- a means for determining a desired load impedance that gives an optimal efficiency of said power amplifier for said required transmission power;
- an antenna element connected to an output of said power amplifier; and
- a control unit for controlling the radiating impedance of the antenna element loading said power amplifier in dependence of said desired load impedance.

40. (new) The arrangement as claimed in claim 39, wherein said means for establishing a required transmission power comprises a read out device for reading out a power control signal fed to said power amplifier or a read out device for reading out the required output power defined by a base station.

41. (new) The arrangement as claimed in claim 39, wherein said means for establishing a required transmission power comprises a measure device for measuring an output voltage and an output current from said power amplifier.

42. (new) The arrangement as claimed in claim 39, wherein said means for determining a desired load impedance comprises a look-up table containing correspondence between desired load impedance and required transmission power.

43. (new) An arrangement for improvement of the efficiency of a power amplifier utilized for transmission of radio signals in a portable radio communication device, comprising:

- a means for determining a power output from said power amplifier;
- an antenna element connected to an output of said power amplifier; and
- a control unit for controlling the radiating impedance of the antenna element loading said power amplifier in dependence of said power output from said power amplifier to increase said power output.

44. (new) The arrangement as claimed in claim 39, wherein said device comprises a capacitive element connected to a ground element, wherein said control unit is arranged to control a coupling of said capacitive element to said antenna element.

45. (new) The arrangement as claimed in claim 44, wherein said capacitive element is a varactor.

46. (new) The arrangement as claimed in claim 39, comprising a conductive element, wherein said control unit is arranged to connect said conductive element to said antenna element or disconnect said conductive element from said antenna element.

47. (new) The arrangement as claimed in claim 39, wherein said antenna element is provided on a dielectric body and said control unit is arranged to vary the dielectric factor (ϵ_r) of said dielectric body.

48. (new) The arrangement as claimed in claim 39, comprising a switch arranged to adjust the length of a slit in said antenna element.